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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/546,551

07/19/2006

Peter Ellenberger

MBZ-0513

8357

23575

7590

04/23/2009

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EXAMINER

ADMASU, ATNAF S

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

04/23/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/546,551	<b>Applicant(s)</b> ELLENBERGER, PETER	
	<b>Examiner</b> ATNAF ADMASU	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☒ Claim(s) 2 and 4-20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>08/23/2005</u> . | 6) <input type="checkbox"/> Other: ____.  |

### **DETAILED ACTION**

1. Claims 1—20 are pending as amended on 23 August 2005.

### ***Information Disclosure Statement***

2. The information disclosure statement submitted on 23 August 2005 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the examiner has considered the information disclosure statements.

### ***Objection***

3. In claims 2 and 4 - 20, independent claim statements should start with a term "The" instead of "A" such as "The method according to claim 1,..." Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1 – 4, 7, 9, 12 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 4,442,018 (Rand hereinafter).

Rand teaches a solution and concentrate for generating stable aqueous foams, and a method of generating stable aqueous foams. Rand further teaches these stable

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high expansion aqueous foams have particular utility when used in as foam drilling fluids for deep well drilling (col. 1, lines 12 – 25). The concentrate composition comprises water, a polyacrylic acid polymer, anionic surfactant of sodium lauryl sulfate or alpha olefin sulfonate (col. 2, lines 1 – 9 and col. 2, lines 62 – 65). The preferred polymer is a polyacrylic acid type which is commonly used to viscosify or gel aqueous systems for industrial applications. These polymers generally have molecular weights of about 500,000 (col. 2, lines 36 - 59).

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claims 1 – 4, 7, 9, 12 and 15 - 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rand.

The disclosure of Rand is adequately set forth in paragraph 9 above and is incorporated herein by reference; however, it does not expressly disclose the injection rate of the foamed aqueous surfactant solution per cubic meter of excavated soil.

It is noted, however, that the variation of the injection rate of the foamed surfactant solution in order to obtain the optimum performance would be obvious to one of ordinary skill in the art at the time the invention was made. Since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering optimum or workable ranges involves only ordinary skill in the art. See MPEP 2144.05(II) and *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

9. Claims 1 – 9, 12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rand in view of US 3,215,200 (Kirkpatrick hereinafter).

The disclosure of Rand is adequately set forth in paragraph 9 above and is incorporated herein by reference; however, it does not expressly disclose the surfactant further comprises polyalkylene alkyl ether sulfate.

Kirkpatrick teaches the production of aqueous foams in a well bore during thereof by gas or mist drilling operations (col. 1, lines 9 – 16). Kirkpatrick further teaches the foaming agents used are anionic surface-active agents of polyoxyethylated organic compounds having a hydrophobic organic base and a hydrophilic polyoxyethylene chain. The polyoxyethylated organic compounds are sulfated to introduce additional hydrophilicity into the polyoxyethylated chain (col. 3, lines 4 – 12).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to utilize Kirkpatrick's sulfated polyoxyethylene surfactant in the foamed drilling fluid of Rand. The rationale to do so would have been the motivation provided by the teaching of Kirkpatrick that to do so would produce light, relatively stable foams in hard water as well as in soft or fresh water (col. 3, lines 1 – 3).

10. Claims 1 – 4, 7 and 9 - 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rand in view of US 4,013,568 (Fischer hereinafter).

The disclosure of Rand is adequately set forth in paragraph 9 above and is incorporated herein by reference; however, it does not expressly disclose the acrylic acid based polymer salt and has a molecular weight of 2,000 to 20,000.

Fischer teaches a composition and method for drilling a well into a subterranean formation containing a geothermal fluid utilizing a gas containing aqueous drilling fluid containing a salt of a high molecular weight acrylic polymer (Abstract). Fischer further teaches a gas-containing aqueous drilling fluid comprising gas and foam, water and alkali metal or ammonium salt of a homopolymer of acrylic acid which homopolymers have an average molecular weight of 5,000 to 50,000 (see claim 1).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to utilize Fischer's alkali metal or ammonium salt of acrylic acid polymer in the foamed drilling fluid of Rand. The rationale to do so would have been the motivation provided by the teaching of Fischer that to do so would reduce the damage to the

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formation due to the invasion of drilling fluid into the formation surrounding the well (col. 2, lines 16 – 19).

### ***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Regarding French Patent Document FR 2690709, cited as an X-reference on the international search report for PCT/EP2004/001229, from which the instant application claims priority, has no English language equivalent. A translation of the reference has been requested and it will be treated in a subsequent Office action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ATNAF ADMASU whose telephone number is (571)270-5465. The examiner can normally be reached on M-F 8:00-5:30, Flexible Schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon can be reached on 571-272-1498. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ASA/

/Timothy J. Kugel/  
Primary Examiner, Art Unit 1796